In the Office Action, the Examiner rejected claims 4-7 and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite; and rejected claims 1-14 under 35 U.S.C. § 103(a) as being unpatentable over Kuisl (U.S. Patent No. 4,650,693).

I. Rejection Under 35 U.S.C. § 112, Second Paragraph

The Examiner rejected claims 4-7 under 35 U.S.C. § 112, second paragraph, alleging that the phrase "the chamber at a predetermined temperature" is unclear. Applicants have amended claim 4 to clarify that "the first and second gaseous or vapor phase compositions are supplied at a predetermined temperature to the reaction chamber."

The Examiner also rejected claim 14 stating that he cannot tell what "heated . . . into a respective supply tank" means. Applicants have amended claim 14 to clarify that "the first and second gaseous or vapor phase compositions are obtained by separately heating under pressure the said first and second compositions, wherein the first and second compositions are contained as pure liquid in separate supply tanks."

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims under 35 U.S.C. § 112, second paragraph.

II. Rejection of Claims Under 35 U.S.C. § 103(a)

The Examiner rejected claims 1-14 under 35 U.S.C. § 103(a) as being unpatentable over Kuisl.

Claim 1 recites a method for a glass preform by depositing an aerosol stream of glass particles onto a target including, inter alia, providing a reaction chamber comprising an inlet and an outlet, wherein an inside of the reaction chamber has a temperature gradient such that a temperature increases from the inlet to the outlet.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

At the outset, Kuisl defines reaction chamber 1 as the chamber in which the heated gaseous $SiCl_4$ and H_2O mix and react (col. 4, lines 44-50). Contrary to Kuisl, the Examiner alleges that "any other chamber in which the reaction occurs can be considered a reaction chamber." Applicants disagree with the Examiner's definition of "reaction chamber" for two reasons. First, one of skill in the art would recognize that the "reaction" in the term "reaction chamber" as used by Kuisl is the heating and mixing of the gaseous $SiCl_4$ and H_2O. Second, the Examiner has not made clear what reaction he alleges is occurring at the "left-most quarter of chamber 60, or the leftmost half of chamber 41." Kuisl discloses that inner conduits 21 and 31 conduct the components into reaction chamber 1 where they mix and react (col. 1, lines 47-53).

Regarding the alleged temperature gradient, Kuisl discloses a reaction chamber (1) having heating element 62 in pipe 21 and 64 in pipe 31 (col. 4, lines 50-52). Furthermore, furnace 60 heats the walls of pipes 21, 31, and 41 to a temperature higher than 1200 °C (col. 4, lines 52-56). And, contrary to the Examiner's statement that "stream 20 is heated higher than 1200," Kuisl only discloses that aerosol stream 20 may be further heated by heating elements 66 in pipe 41 (col. 4, lines 56-59). In fact, Kuisl discloses that aerosol stream 20 may be heated higher than the reaction temperature of 800-1000 °C (col. 4, lines 35-38 and 47-48), but fails to disclose heating higher than 1200°C. Since pipes 21, 31, and 41 end before the outlet of reaction chamber 1, the temperature at the outlet can only be the same or lower than the temperature at the inlet of reaction chamber 1. Thus, Kuisl fails to disclose at least providing a reaction chamber comprising an inlet and an outlet, wherein an inside of the

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

reaction chamber has a temperature gradient such that a temperature increases from the inlet to the outlet as recited by claim 1 of the present invention.

Accordingly, Applicants request that the Examiner reconsider and withdraw the rejection of claims under 35 U.S.C. § 103(a). Applicants submit that claim 1 is in condition for allowance, as are claims 2-14 at least by virtue of their dependency on allowable claim 1.

III. Conclusion

In view of the foregoing remarks, Applicants respectfully request the reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER, L.L.P.

Dated: April 23, 2002

By: _____
Timothy M. Hsieh
Registration No. 42,672

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

Application Number: 09/465,016
Filing Date: December 16, 1999
Attorney Docket Number: 05788.0111

APPENDIX TO AMENDMENT OF APRIL 23, 2002

VERSION WITH MARKINGS TO SHOW CHANGES MADE

AMENDMENTS TO THE CLAIMS

1. (Amended) Method for manufacturing a glass preform by depositing an aerosol stream of glass particles onto a target, which comprises:

- providing a reaction chamber comprising an inlet and an outlet, wherein an inside of the reaction chamber has a temperature gradient such that a temperature increases from the inlet to the outlet;

- supplying a first gaseous or vapor phase composition disposed to provide a hydrolyzable glass precursor to the inlet of the [an inlet zone of a] reaction chamber;

supplying water as a second gaseous or vapor phase composition to said inlet [zone] of the reaction chamber;

reacting the water and the first gaseous or vapor phase composition in the reaction chamber to form an aerosol of glass particles;

directing the aerosol along said reaction chamber and through an outlet of said reaction chamber onto a target on which the preform is formed; and

depositing the aerosol on the target [,

characterized in that a temperature gradient is provided inside of said chamber, said temperature gradient being such that the temperature increases from said inlet zone to said outlet of the reaction chamber].

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

4. (Amended) Method according to claim 1 wherein the first and second gaseous or vapor phase compositions are supplied at a predetermined temperature to the reaction chamber [at a predetermined temperature].

14. (Amended) Method according to claim 1 wherein the first and second gaseous or vapor phase compositions are obtained by separately heating under pressure the said first and second compositions, wherein the first and second compositions are contained as pure liquid in separate supply tanks [into a respective supply tank].

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com